Learning Theories

MATH 4141

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Maslow's Hierarchy of Needs

Maslow's Hierarchy of Needs is characterized by five levels of needs which are fulfilled in a progressive manner. More specifically, Maslow argues that physiological and safety needs must first be achieved before one can strive to meet the higher needs of belongingness, esteem and self-actualization.

Maslow's learning theory pertains to my teaching philosophy because I believe students must first be nourished and cared for before the learning process can begin. For example, if a student is hungry or feels threatened, focus will be placed on these facts rather than the material being covered in class. Consequently, as a future teacher, I will greatly support breakfast clubs to fuel student minds and extracurricular activities to create a sense of community.

Furthermore, once students' primary needs are met, Maslow explains that positive relationships can then be formed. These relationships are vital to the learning process in a mathematics classroom since many students have a fear of the subject matter. More specifically, it is probable that a student with a 'math phobia' will be more inclined to participate in lesson activities if a sense of family in the classroom has been established. Ultimately, positive relationships allow students to feel reinforced and supported by their peers, in turn encouraging students to problem solve, experiment with solutions and eliminate fear of failure.

In conclusion, I do not believe that teacher's sole responsibility is to teach content. I believe teachers have a significant role in nurturing and caring for students, building student esteem and providing support. Ultimately, I believe Maslow's Hierarchy of Needs is an excellent reference for educators to better understand the learning process that will enable students to be successful.

Bloom's Taxonomy (Bloom)

Bloom's Taxonomy describes the learning process as six cognitive levels that are completed in sequential order. More specifically, a level must first be completed before the next level can be introduced.

As a future educator, the idea that students should gradually become intellectually challenged is a model that I will adopt. For instance, if teaching the quadratic formula, I would first allow students to remember the formula, understand how it is used and then apply their knowledge to a problem. Once this is mastered, students would then be challenged to analyze the calculated roots, evaluate and (perhaps) create problems of their own. With that said, I do not necessarily believe that the evaluation level should be met after the analysis step, or vice versa. I do however, as does the model, believe that (in general) students should start learning the basics and gradually develop their skills. Simply said, it is not reasonable to expect students to have the abilities required to analyze and evaluate before a foundational knowledge base has been reached.

In conclusion, mathematics is a subject that is constantly building. As a result, it is important for students to not fall behind in mathematics, since as this model suggests, basic knowledge is required for future analysis. It is the responsibility of teachers and the education system to effectively and consistently teach mathematics starting at a young age.

Problem-Based Learning (PBL)

Problem-Based Learning is an instructional strategy focused on resolving real-world problems through cooperative learning practices. This learning theory pertains to my teaching philosophy due to its defining characteristics; the model incorporates open-ended problems with no right answer, the teacher acts as a facilitator and students work in self-directed, cooperative groups.

Firstly, many students have a fear of mathematics and thus refrain from participating in classroom activities. However, since open-ended problems have no right answer, students are alleviated of their fear of failure. In turn, even students with lower mathematical abilities are engaged in the problem solving process.

Furthermore, these open-ended questions are commonly completed in self-directed, cooperative groups or pairs. Students are more likely to bring forth their ideas in class, take risks, and be creative, since in this setting, students obtain the reassurance and peer-support they need.

Lastly, many students answer mathematics problems following procedures and ideas previously used by their teacher. In the PBL model, students are self-directed; consequently, students are free to generate their own ideas, be creative and build their self-esteem since success was a product of their own work.

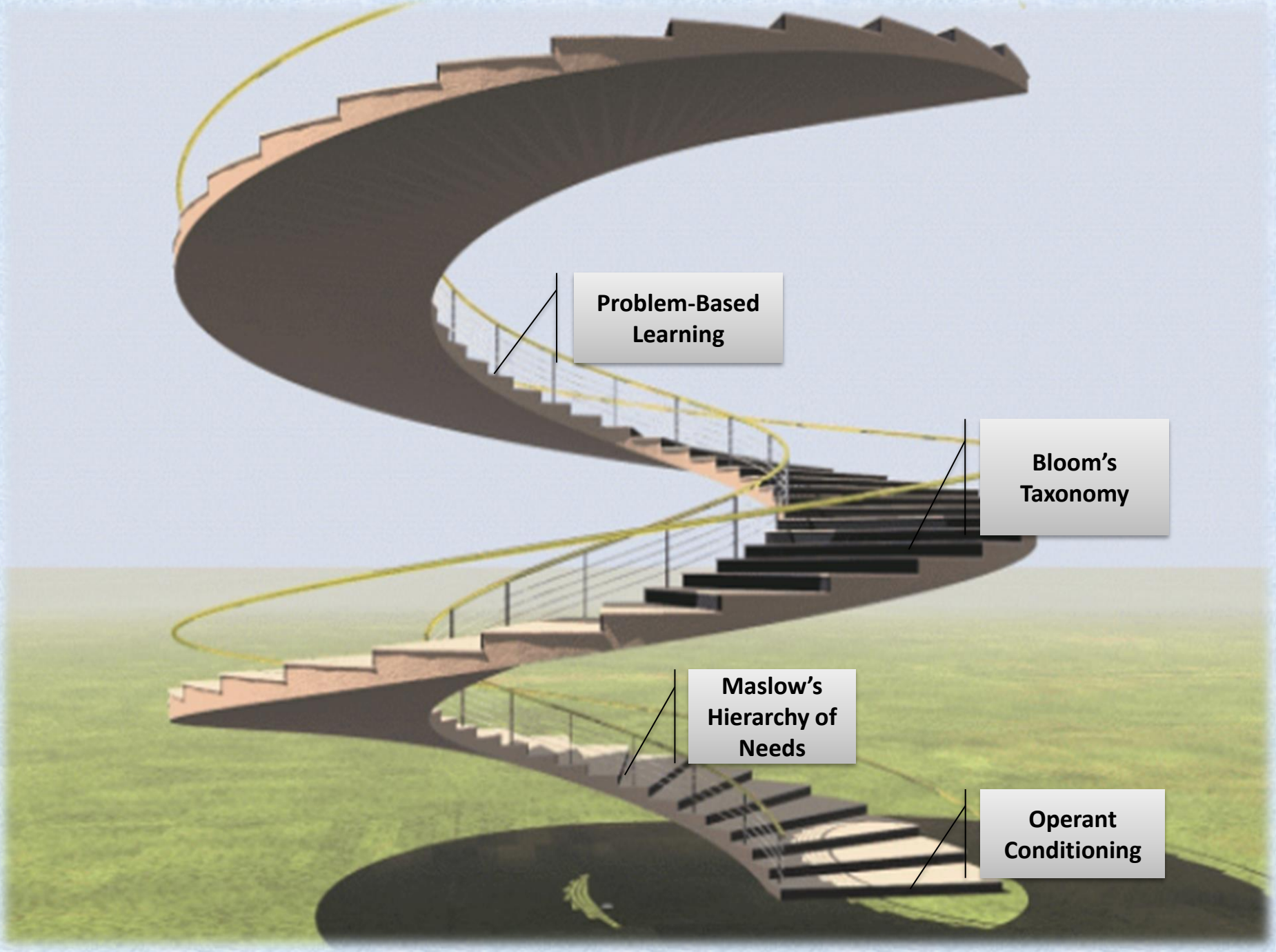
Despite the benefits of using this model, it cannot be used at all times; ultimately, not all curriculum expectations can be met using PBL (i.e. concepts such as derivatives of exponentials cannot be taught in this manner). Nonetheless, I will use this strategy as frequently as possible since, as it has been highlighted above, it has numerous benefits for student learning.

Operant Conditioning (Skinner)

Operant Conditioning is a behaviour theory characterized by positive and negative reinforcers and punishments. Positive reinforcers (addition of a desirable outcome after an appropriate action) and negative reinforcers (removal of an undesired outcome after an appropriate action) both encourage an individual's behaviour to continue. In contrast, positive punishment (unfavourable events are given after an inappropriate action) and negative punishment (favourable events are removed after an inappropriate action) both discourage an individual's behaviour from continuing.

This learning theory is important to my teaching style because I believe that classroom management is an educator's utmost priority. Fundamentally, teachers cannot teach a class if students are disruptive and fail to follow rules. As a result, in my classroom, I will use encouraging words and 'prizes' to encourage students' positive behaviours. To discourage negative actions, I will use detention, confrontation (one-on-one discussions with the student) and phone calls home (punishment). Ultimately, by

collectively using positive and negative reinforcers and punishments I hope to gain control and structure in my classroom and focus my energy on teaching rather than distractions.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